



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,714	12/05/2003	Ju-hyung Kim	SDIYPL340AUS	6907
20995 7590 02/09/2011 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614				
EXAMINER WALKER, KEITH D				
ART UNIT		PAPER NUMBER		
1726				
NOTIFICATION DATE		DELIVERY MODE		
02/09/2011		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
efiling@kmob.com
eOAPilot@kmob.com

Office Action Summary

Application No.

10/727,714

Applicant(s)

KIM ET AL.

Examiner

KEITH WALKER

Art Unit

1726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 15-17 and 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 15-17 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Correspondence's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 12/27/10 has been entered.

Response to Amendment

Claims 12, 15-17 & 35 are pending examination as discussed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 12, 17 & 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,492,058 (Watanabe) in view of US 5,976,729 (Morishita).

Watanabe teaches an electrical generation element housed in a can with two terminals. A positive temperature coefficient (PTC) safety device is located between a

protection device and a first terminal (Figs. 10, 15; 8:43-49). The PTC protects the battery by restricting the flow of current when the temperature increases and a rapid increase in the voltage will cause the battery to heat up. The protection circuit is used in conjunction with the PTC to aid in preventing the over-charging and over-discharging of the battery (Fig. 1 & 2; 1:13-20). The protection circuit is connected to the safety device and the second terminal (8:65 – 9:5). The intermediate product, as taught by Watanabe is a lithium battery with a safety device located on the exterior of the battery with one end of the lead disposed at a terminal and the other end connected to the safety device (Figs. 1, 2, 10). The PTC element has separate leads coming from the element before assembly with the two leads attached to their respective terminals (Figs. 1 & 10 and relevant passages).

Watanabe is silent to the materials used for the leads and the housing.

Like Watanabe, Morishita teaches a lithium ion cell with an external protective circuit for controlling the cell voltage to prevent overcharge and over-discharge (1:10-15). The first lead connects the first terminal and the PTC device and the first lead is made from a first material and a second material. The first material is nickel that contacts the PTC device and a second material is aluminum that contacts the first terminal (5:30-38). The components are welded together using ultrasonic welding (2:37-40). As stated above, the outer can and lead are made of the same material and attached using ultrasonic welding so a smaller heat value is required, thereby preventing the occurrence of pinholes and cracks (2:37-53). Two-layer cladding for the lead plate is also used for current utilization (5:22-27). So regarding the different first

and second materials used as leads, the use of multiple materials is taught and it would have been obvious to one having ordinary skill in the art at the time the invention was made to pick lead materials based on the use in the battery and the style of welding needed. It is held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*MPEP 2144.07*).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the lithium cell of Watanabe with the battery casing and lead material of Morishita to understand what materials should be used for the leads in the production of the lithium battery with a protective device.

Watanabe is silent to the material for the second lead between the PTC element and the protection circuit.

As discussed above, Morishita teaches using nickel as the material connected to the PTC device. Therefore it would be obvious to one of ordinary skill in the art to use the same material for electrical connection on the other side of the PTC device as taught by Watanabe. The choosing the type of material used for the electrical leads connecting protective devices is well within the prevue of the ordinary artisan and since no synergistic effect or unexpected results are illustrated, it would have been obvious to one having ordinary skill in the art at the time the invention was made to pick lead materials based on the use in the battery and the style of welding needed. Combining prior art elements according to known methods to yield predictable results and using

Art Unit: 1726

known techniques to improve similar devices in the same way are considered obvious to one of ordinary skill in the art (KSR, MPEP 2141 (III)).

2. Claims 15 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,492,058 (Watanabe) in view of US Patent 5,976,729 (Morishita) and US Patent 5,188,909 (Pedicini).

The teachings of Watanabe and Morishita as discussed above are incorporated herein.

Watanabe is silent to the use of a safety vent.

Pedicini teaches sealing the opening of the battery with a cap assembly that has a vent for the cell (5:52-66).

The motivation to use a cap with a vent is to provide a means for the expulsion of any internal gas pressure created by the battery. The pressure will not only cause a decline in the effectiveness of the battery but can cause the battery to rupture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Watanabe with the cap vent to promote a safer and more efficient battery.

3. Claims 12, 17 & 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,936,374 (Ehara).

Ehara teaches an electrical generation element housed in a can with two terminals. A positive temperature coefficient (PTC) safety device is located between a

Art Unit: 1726

protection device and a first terminal (Figs. 2; 2:45-65, 3:30-4:40). The PTC protects the battery by restricting the flow of current when the temperature increases and a rapid increase in the voltage will cause the battery to heat up (1:60-2:10). The protection circuit is connected to the PTC and the second terminal and aids in preventing the over-charging and over-discharging of the battery. The first lead connects the first terminal and the PTC device and the first lead is made from a first material and a second material. The first material is nickel that contacts the PTC device and a second material is aluminum that contacts the first terminal. The second lead, connecting the PTC and the circuit board is made of a single layer of nickel.

Ehara is silent to the entire length of the first lead comprising a first and second material. As taught by Ehara, the first lead is made of nickel that is welded to the first terminal, which is the bottom of the can (3:50-68). The bottom of the can is a clad material of aluminum and nickel with the aluminum side facing the battery and the nickel surface facing the first lead. While the whole first lead is not made of a clad material, the portions that are welded and electrically contacting are similar to the claimed invention. No synergistic effects or unexpected results are illustrated for using a first lead that comprises two materials for the length of the lead material. Combining prior art elements according to known methods to yield predictable results and using known techniques to improve similar devices in the same way are considered obvious to one of ordinary skill in the art (KSR, MPEP 2141 (III)). Furthermore, it is held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice (*MPEP 2144.07*).

4. Claims 15 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,936,374 (Ehara) in view of US 5,188,909 (Pedicini).

The teachings of Ehara as discussed above are incorporated herein.

Ehara is silent to the use of a safety vent.

Pedicini teaches sealing the opening of the battery with a cap assembly that has a vent for the cell (5:52-66).

The motivation to use a cap with a vent is to provide a means for the expulsion of any internal gas pressure created by the battery. The pressure will not only cause a decline in the effectiveness of the battery but can cause the battery to rupture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the battery of Watanabe with the cap vent to promote a safer and more efficient battery.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Keith Walker/
Primary Examiner, Art Unit 1726